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Serial No. : 10/659,116
Filed : September 10, 2003
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Attorney's Docket No.: 10527-429004 / SM-
P0290US04

Amendments to the Claims:

This listing of claims replaces all prior versions and listings of claims in the application:

Listing of Claims:

1.-27. (Canceled)

28. (Currently Amended) A cryo-therapy device, comprising:
a shaft having a proximal end and a distal end;
a cooling chamber disposed at the distal end of the shaft and defining an interior space;
a coolant intake tube disposed within the shaft, the coolant intake tube having a distal opening in fluid communication with the interior space of the cooling chamber and arranged to create a phase change in fluids introduced through the coolant intake tube, and
an exhaust tube disposed within the shaft, the exhaust tube having a distal opening in fluid communication with the interior space of the cooling chamber,
wherein the shaft further comprises an inflation lumen in fluid communication with a balloon positioned around the cooling chamber.

29. (Cancelled)

30. (Cancelled)

31. (Original) The device in accordance with claim 28, further comprising an outer sheath disposed over at least a portion of the shaft that defines a vacuum lumen therebetween.

32. (Previously presented) The device in accordance with claim 28, further comprising one or more thermal-resistive sensors disposed proximate the cooling chamber.

Claims 33 – 35 (Cancelled)

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36. (Original) The device in accordance with claim 32, further comprising an outer sheath disposed over at least a portion of the shaft that defines a vacuum lumen therebetween.

37. (Currently Amended) The device in accordance with claim [[32]] 31, further comprising one or more thermal-resistive sensors disposed proximate the cooling chamber.

38. (Currently Amended) A method of causing cold-induced tissue treatment, comprising the steps of:

providing a catheter having a cooling chamber and a balloon positioned around the chamber;

advancing the cooling chamber near tissue to be treated in a patient's vasculature; and
delivering liquid coolant through a coolant intake tube in the catheter and causing a phase change in the coolant to cool the lesion tissue.

39. (Previously presented) The method in accordance with claim 38, further comprising the step of exhausting gaseous coolant from the cooling chamber through an exhaust tube.

40. (Previously presented) The method in accordance with claim 38, wherein the step of delivering coolant through the coolant intake tube to the cooling chamber to cool the tissue decreases the temperature of the cooling chamber within the range of about -40°C to about 20°C.

41. (Previously presented) The method in accordance with claim 38, further comprising the step of freezing a portion of the tissue.